OAKS PARK RESERVOIR

Introduction

Oaks Park Reservoir is a moderate sized reservoir on the south slope of the eastern High Uintas. It has a small, natural watershed and provides summer recreational opportunities. It is also known as Oak Park Reservoir.

Oaks Park Reservoir was created in 1924 by the construction of an earth-fill dam. The reservoir shoreline is owned by the Ashley National Forest, and public access is unrestricted. Reservoir water is consumed for irrigation, but used for coldwater aquatic habitat and recreation. Water use is not expected to change in the foreseeable future.

Characteristics and Morphometry

Lake elevation (meters / feet)	2,828 / 9,280
Surface area (hectares / acres)	155 / 382
Watershed area (hectares / acres)	2,626 / 6,488
Volume (m^3 / acre-feet)	
capacity	8,297,800 / 6,727
conservation pool	0
Annual inflow (m^3 / acre-feet)	
Retention time (years)	
Drawdown (m^3 / acre-feet)	
Depth (meters / feet)	
maximum	12.8 / 42
mean	5.4 / 17.6
Length (meters / feet)	610 / 2,001
Width (meters / feet)	366 / 1,201
Shoreline (km / miles)	6.6 / 4.1

Location

County	Uintah
Longitude / Latitude	109 44 52 / 40 37 05
USGS Map	Oak Park & East Park Resr, 1963, Dyer Mtn, 1950
DeLorme's Utah Atlas & Gazetteer™	Page 56, B-2
Cataloging Unit	Ashley-Brush Creeks (16060002)

Recreation

Oaks Park Reservoir is accessible from the Red Cloud Loop road north of Vernal. Turn west on FS-018--The Red Cloud Loop--from between mileposts 220 and 221 on US-191 (about 22 miles north of Vernal and 15 miles south of the Flaming Gorge Jct (US-191 and U-44). The route is signed East Park, Red Cloud Loop. The road is paved for

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about three miles, after which the Red Cloud Loop branches to the left. Continue on the Red CLoud Loop, now gravel, for about ten miles, to where the road to Oaks Park Reservoir branches off to the right. It is well marked. The reservoir is about 1.5 miles off the loop on this side road.

Fishing, boating, swimming, camping, and picnicking are all popular.

Recreational facilities at the reservoir include a Oaks Park Campground, a USFS facility, which has primitive latrines, picnic areas, and campsites, but no drinking water. There is no boatramp, but it is possible to launch a small boat near the dam.

Watershed Description

Oaks Park Reservoir is located in the High Uintas. The watershed consists entirely of alpine meadows, coniferous forests and alpine tundra. Slopes surrounding the reservoir are not particularly steep (<25%). The reservoir is an impoundment of what was Oaks Park, a meadow that Big Brush Creek flowed through.

The watershed high point, an unnamed peak four miles northwest, is 3,240 m (10,629 ft) above sea level, thereby developing a complex slope of 7.9% to the reservoir. The average stream gradient of Big Brush Creek is 3.3% (179 feet per mile). The inflows are Big Brush Creek and an unnamed tributary from Windy Park. The outflow is a canal that flows across Government Park and into Ashley Creek. Excess water flows down Big Brush Creek several miles to where the stream becomes subterranean.

The watershed is made up of high mountains and mountains meadows. The soil associations that compose the watershed are listed in Appendix III.

The vegetation communities consist of spruce-fir, meadow and aspen. The watershed receives 64 - 76 cm (25 - 30 inches) of precipitation annually. The frost-free season around the reservoir is 0 - 20 days per year.

Land use in the watershed is 100% multiple use, with logging, grazing and human recreation being the primary uses. A large portion of the forest has been clearcut in the past decade, which may have contributed to current water quality degradation. The forest and soil are healing, but very slowly, given the high altitude and short growing season. Current logging operations leave a 200 foot buffer around the reservoir.

Limnological Assessment

The water quality of Oak Park Reservoir is very good. It is considered to be very soft with a hardness concentration value of approximately 14.6 mg/L (CaCO3). The parameters that have exceeded State water quality standards for defined beneficial uses are total phosphorus, pH, and dissolved oxygen. The average concentrations of total phosphorus in the water column for the three study periods has not exceeded the recommended pollution indicator for phosphorus of 25 ug/L, but an occasional value is reported slightly in excess of the indicator. Although these occasional exceedences do not impair water quality as such, dissolved oxygen concentrations in

Limnological Data

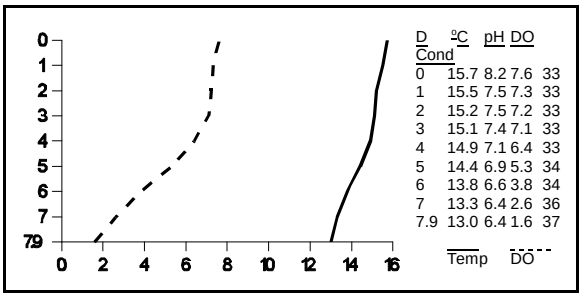
Data averaged from STORET sites: 593770, 593771

Surface Data	1981	1989	1991
Trophic Status	M	M	M
Chlorophyll TSI	-	50.84	43.60
Secchi Depth TSI	60.00	56.26	58.11
Phosphorous TSI	39.3	38.71	41.96
Average TSI	49.65	48.61	47.89
Chlorophyll a (ug/L)	-	7.9	3.8
Transparency (m)	1	1.3	1.1
Total Phosphorous (ug/L)	20	14	14
pH	8.5	7.2	7.8
Total Susp. Solids (mg/L)	<5	-	5
Total Volatile Solids (mg/L)	-	-	4
Total Residual Solids (mg/L)	-	-	2
Temperature (°C / °f)	12/54	13/55	13/56
Conductivity (umhos.cm)	20	36	28
Water Column Data			
Ammonia (mg/L)	0.05	0.01	0.04
Nitrate/Nitrite (mg/L)	0.12	-	0.03
Hardness (mg/L)	17.5	-	11.7
Alkalinity (mg/L)	7	-	9.5
Silica (mg/L)	-	-	3.6
Total Phosphorous (ug/L)	23	19	17
Miscellaneous Data			
Limiting Nutrient	N	N	N
DO (Mg/l) at 75% depth	6.7	6.8	3.8
Stratification (m)	NO	NO	NO
Depth at Deepest Site (m)	10	4.2	7.9

late summer substantiate the fact that water quality impairments do exist. As observed in the September 5, 1991 profile there is moderate decline in the concentrations in the lower regions of the reservoir. It is also in the hypolimnion that low pH values appear.

The reservoir does not typically stratify as indicated by the profile. This is due in part to a fairly rapid drawdown to shallower conditions, which are not conducive for stratification. Current data indicates that the reservoir is currently a nitrogen limited system. TSI values indicate the reservoir is mesotrophic. The reservoir has not been surveyed during the winter but near anoxic conditions late in the summer indicate that there may be severe conditions present with ice coverage. The Ashley National Forest and the Utah Division of Wildlife Resources are working with the Ashley Valley Reservoir Company to determine how a fishery conservation pool can be created to enhance the overwintering of fish.

According to DWR no fish kills have been reported in recent years. The reservoir supports populations of brook trout (*Salvelinus fontinalis*), and rainbow trout (*Oncorhynchus mykiss*). The lake has not been treated for rough fish competition, so populations of native fishes may still be present in the lake. Current stocking reports indicate that DWR stocks the reservoir with 2,500 catchable rainbow trout annually.



D	°C	pH	DO Cond
0	15.7	8.2	7.6 33
1	15.5	7.5	7.3 33
2	15.2	7.5	7.2 33
3	15.1	7.4	7.1 33
4	14.9	7.1	6.4 33
5	14.4	6.9	5.3 34
6	13.8	6.6	3.8 34
7	13.3	6.4	2.6 36
7.9	13.0	6.4	1.6 37

Phytoplankton in the euphotic zone include the following taxa (in order of dominance)

Species	Cell Volume (mm^3/liter)	% Density By Volume
Asterionella formosa	0.567	60.57
Oocystis sp.	0.241	25.83
Dinobryon divergens	0.104	11.15
Scenedesmus quadricauda	0. 0 1 3	1.43
Centric diatoms	0.006	0.68
Pennate diatoms	0.003	0.36
Total	0.934	

Shannon-Weaver [H']	1.01
Species Evenness	0.57
Species Richness [d]	0.24

The phytoplankton community is dominated by the presence of diatoms and green algae support of the water quality assessment.

Pollution Assessment

Nonpoint pollution sources include grazing, concentrated and dispersed recreation, and logging.

Grazing takes place throughout the watershed and in the vicinity of the reservoir.

Although much of the watershed has been clearcut in fairly recent history, shallow slopes in the watershed have prevented substantial watershed damage from taking place. There are no point sources of pollution in the watershed.

Information

Management Agencies	
Uinta Basin Association of Governments	722-4518
Division of Wildlife Resources	538-4700
Division of Water Quality	538-6146
Ashley National Forest	789-1181
Vernal Ranger District	789-1181
Recreation	
Dinosaurland Travel Region (Vernal)	789-6932
Vernal Chamber of Commerce	789-1352
Reservoir Administrators	
Whiterocks Irrigation Company, LaPoint	247-2327

Beneficial Use Classification

The state beneficial use classifications include: boating and similar recreation (excluding swimming) (2B), cold water game fish and organisms in their food chain (3A) and agricultural uses (4).

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